DATA INPUT/OUTPUT DEVICE AND STORAGE MEDIUM

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Abstract

PROBLEM TO BE SOLVED: To provide a data input/output device which can improve a man- machine interface, when various input/output functions are executed from the outside.
SOLUTION: A facsimile machine A as a data input/output device, which has a RAM 12 for storing input/output data according to an input/output function for data and is connected to a personal computer PC, equipped with a monitor part for executing various input/output functions. A CPU 10 makes the personal computer PC recognize the RAM 12 as a storage device and displays the kinds of individual input/output data, which are stored in the RAM 12 on the monitor part in a list format.

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(54)【発明の名称】　データ入出力装置および記憶媒体

(57)【要約】

【課題】　各種入出力機能を外部から実行させる際のマンマシン・インターフェースを改善することができるデータ入出力装置を提供する。

【解決手段】　データの入出力機能に応じて入出力データを格納するRAM12を有し、モニタ部を備えたパーソナルコンピュータPCに接続されて各種の入出力機能を実行するデータ入出力装置としてのファクシミリ装置Aであって、CPU10は、パーソナルコンピュータPCにRAM12をストレージデバイスとして認識させるとともに、そのRAM12に格納されている個々の入出力データの種別を一覧表示形式にてモニタ部に表示させる。
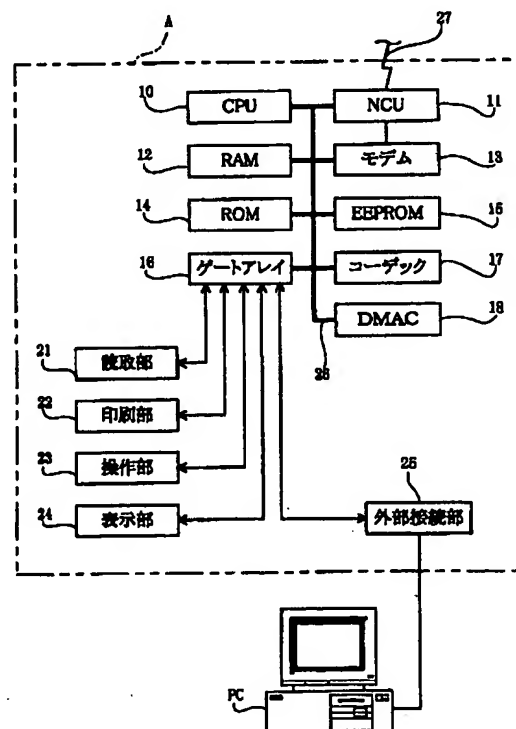
【特許請求の範囲】

【請求項1】 データの入出力機能に応じて入出力データを格納する記憶手段を有し、モニタ部を備えた情報処理装置に接続されて各種の入出力機能を実行するデータ入出力装置であって、

上記情報処理装置に上記記憶手段を外部記憶装置として認識させるとともに、その記憶手段に格納されている個々の入出力データの種別を一覧表示形式にて上記モニタ部に表示させる制御手段を有することを特徴とするデータ入出力装置。

【請求項2】 上記制御手段は、上記情報処理装置が直接取り扱い可能なデータ形式として入出力データを上記記憶手段に格納させる、請求項1に記載のデータ入出力装置。

【請求項3】 上記制御手段は、スキャナ機能またはファクシミリ受信機能に基づいて得られた入力データを上記記憶手段に格納させる、請求項1または請求項2に記載のデータ入出力装置。

【請求項4】 上記制御手段は、上記情報処理装置からの出力操作に応じて出力データが上記記憶手段に格納された場合、その出力データを出力すべきプリンタ機能またはファクシミリ送信機能のいずれか一を選択して実行させる、請求項1ないし請求項3のいずれかに記載のデータ入出力装置。

【請求項5】 データの入出力機能に応じて入出力データを格納する記憶手段を有し、モニタ部を備えた情報処理装置に接続されて各種の入出力機能を実行するデータ入出力装置を制御するためのプログラムを記憶した記憶媒体であって、

上記情報処理装置に上記記憶手段を外部記憶装置として認識させるとともに、その記憶手段に格納されている個々の入出力データの種別を一覧表示形式にて上記モニタ部に表示させるための制御プログラムを含むプログラムを記憶したことを特徴とする記憶媒体。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、たとえばファクシミリ送受信機能、スキャナ機能、プリンタ機能、あるいはコピー機能などの各種入出力機能を備えたデータ入力装置、およびそのデータ入出力装置を制御するためのプログラムを記憶した記憶媒体に関する。

【0002】

【従来の技術】データ入出力装置の一つであるファクシミリ装置は、たとえばパーソナルコンピュータなどに接続して使用可能であり、主目的となるファクシミリ送受信機能の他、スキャナ機能、プリンタ機能、あるいはコピー機能といった各種の入出力機能を備えている。

【0003】この種の各機能は、パーソナルコンピュータからの指令に基づいて実行可能とされ、たとえばファクシミリ送受信機能を実行する際には、ファクシミリ送受信用のアプリケーションプログラムに応じて入出力画像データが送受信され、スキャナ機能を実行する際には、TWAIN（Technology Without Any Interrested Name ：画像取り込みのための規格）対応のアプリケーションプログラムに応じて入力画像データが取り込まれ、プリンタ機能を実行する際には、デバイスドライバを介して出力画像データがスプール転送される。つまり、各入出力機能は、パーソナルコンピュータを介してそれぞれ個別に制御され、使用者は、目的とする機能に応じたアプリケーションプログラムを選択した後、そのプログラムを起動して目的の機能を開始させる。

【0004】

【発明が解決しようとする課題】ここで、上記のようにパーソナルコンピュータを介して各種入出力機能を実行する際には、目的とする機能に応じたアプリケーションプログラムを選択する操作が使用者に強いられ、使用者にとっては、入出力各種機能に応じた多様な操作が必要とされる。そのため、この種のファクシミリ装置においては、パーソナルコンピュータの周辺機器として利用する際のマンマシン・インターフェースを改善すべき点が要請されていた。

【0005】本発明は、上記の点に鑑みて提案されたものであって、各種入出力機能を外部から実行させる際のマンマシン・インターフェースを改善することができるデータ入出力装置、およびデータ入出力装置を制御するためのプログラムを記憶した記憶媒体を提供することを目的とする。

【0006】

【課題を解決するための手段】上記目的を達成するために、請求項1に記載した発明のデータ入出力装置は、データの入出力機能に応じて入出力データを格納する記憶手段を有し、モニタ部を備えた情報処理装置に接続されて各種の入出力機能を実行するデータ入出力装置であって、上記情報処理装置に上記記憶手段を外部記憶装置として認識させるとともに、その記憶手段に格納されている個々の入出力データの種別を一覧表示形式にて上記モニタ部に表示させる制御手段を有することを特徴とする。

【0007】このようなデータ入出力装置によれば、情報処理装置の一例として、たとえばパーソナルコンピュータと接続され、そのパーソナルコンピュータのモニタ部に入出力データの種別を一覧表示させることができる。つまり、データ入出力装置の記憶手段に格納された入出力データは、パーソナルコンピュータのモニタ部を通じてあたかもパーソナルコンピュータ上に存在するかのように取り扱われ、全ての入出力データがパーソナルコンピュータにより一元管理されるので、これらの入出力データを基にして各種入出力機能を実行させる際のマンマシン・インターフェースを改善することができる。

【0008】また、請求項2に記載した発明のデータ入

出力装置は、請求項1に記載のデータ入出力装置であって、上記制御手段は、上記情報処理装置が直接取り扱い可能なデータ形式として入出力データを上記記憶手段に格納させる。

【0009】このようなデータ入出力装置によれば、請求項1に記載のデータ入出力装置による効果に加えて、データ入出力装置の記憶手段に格納された入出力データは、パーソナルコンピュータなどの情報処理装置の直接取り扱い可能なデータ形式とされるので、煩わしいデータ形式の変換処理などを行うことなく、そのまま入力処理や出力処理に入出力データを用いることができる。

【0010】さらに、請求項3に記載した発明のデータ入出力装置は、請求項1または請求項2に記載のデータ入出力装置であって、上記制御手段は、スキャナ機能またはファクシミリ受信機能に基づいて得られた入力データを上記記憶手段に格納させる。

【0011】このようなデータ入出力装置によれば、請求項1または請求項2に記載のデータ入出力装置による効果に加えて、スキャナ機能またはファクシミリ受信機能に基づいて得られた入力画像データを自己の記憶手段に格納させたまま、パーソナルコンピュータなどを介して一元的に管理することができる。

【0012】また、請求項4に記載した発明のデータ入出力装置は、請求項1ないし請求項3のいずれかに記載のデータ入出力装置であって、上記制御手段は、上記情報処理装置からの出力操作に応じて出力データが上記記憶手段に格納された場合、その出力データを出力すべきプリンタ機能またはファクシミリ送信機能のいずれか一を選択して実行させる。

【0013】このようなデータ入出力装置によれば、請求項1ないし請求項3のいずれかに記載のデータ入出力装置による効果に加えて、たとえばパーソナルコンピュータなどからの出力操作に応じて出力画像データが記憶手段に格納された場合、その出力画像データを使用者が目的とするプリンタ機能またはファクシミリ送信機能のいずれかにより処理させることができる。

【0014】さらに、請求項5に記載した発明の記憶媒体は、データの入出力機能に応じて入出力データを格納する記憶手段を有し、モニタ部を備えた情報処理装置に接続されて各種の入出力機能を実行するデータ入出力装置を制御するためのプログラムを記憶した記憶媒体であって、上記情報処理装置に上記記憶手段を外部記憶装置として認識させるとともに、その記憶手段に格納されている個々の入出力データの種別を一覧表示形式にて上記モニタ部に表示させるための制御プログラムを含むプログラムを記憶したことを特徴とする。

【0015】このような記憶媒体によれば、記憶されたプログラムに基づいてCPUを動作させることにより、請求項1に記載のデータ入出力装置の動作を実現することができる。

【0016】
【発明の実施の形態】以下、本発明の好ましい実施の形態について図面を参照して具体的に説明する。

【0017】図1は、本発明に係るデータ入出力装置の一実施形態として、ファクシミリ装置の回路構成を示したブロック図である。なお、このファクシミリ装置Aは、主目的となるファクシミリ送受信機能の他、スキャナ機能、プリンタ機能、さらにはコピー機能といった各種の入出力機能を複合的に備えたものである。

【0018】図1に示すようにファクシミリ装置Aは、CPU10、NCU11、RAM12、モデム13、ROM14、EEPROM15、ゲートアレイ16、コーデック17、DMAC18、読取部21、印刷部22、操作部23、表示部24、および外部接続部25などを具備して概略構成されている。CPU10、NCU11、RAM12、モデム13、ROM14、EEPROM15、ゲートアレイ16、コーデック17、およびDMAC18は、バス線26により相互に接続されている。バス線26には、アドレスバス、データバス、および制御信号線が含まれる。ゲートアレイ16には、読取部21、印刷部22、操作部23、表示部24、および外部接続部25が接続されている。NCU11には、公衆電話回線27が接続されている。

【0019】CPU10は、各種のデータ入出力機能を実現するファクシミリ装置全体の動作を制御する。NCU11は、公衆電話回線27に接続されて網制御を行う。RAM12は、CPU10の作業領域や各種データの格納領域などとして用いられ、電源バックアップが施されている。モデム13は、ファクシミリデータの変調や復調などを行う。ROM14は、CPU10の実行プログラムや設定値などのデータを記憶している。EEPROM15は、各種のフラグや設定データなどを記憶する。ゲートアレイ16は、CPU10と各部21～25とのインターフェースとして機能する。コーデック17は、ファクシミリデータの符号化や復号化を行う。DMAC18は、主にRAM12へのデータの書き込みや読み出しを行う。

【0020】読取部21は、原稿などから画像を読み取るイメージセンサなどを備え、主にスキャナ機能を実現する。印刷部22は、用紙上に画像を印刷するインクジェット方式あるいはサーマル方式の印刷機構を備え、主にプリンタ機能を実現する。操作部23は、使用者のキー操作などに応じた操作信号をCPU10に伝えるためのものである。表示部24は、LCDなどを備えており、ファクシミリ装置Aのステータス情報などを表示する。外部接続部25は、ファクシミリ装置Aに対するパーソナルコンピュータPCの接続ポートとして用いられる。

【0021】一方、ファクシミリ装置Aに接続されるパーソナルコンピュータPCは、特に詳述しないが、既知

のハードウェアおよびソフトウェアを備えたものであって、少なくともＣＲＴ（Cathode Ray Tube：陰極線管）ディスプレイ、あるいはＬＣＤ（Liquid Crystal Display：液晶表示ディスプレイ）などのモニタ部を備える。また、パーソナルコンピュータＰＣは、ＧＵＩ（Graphical User Interface）対応のＯＳ（Operating System：基本システムプログラム）により、いわゆるアイコンやウインドウを基本としたイベントドリブン方式の操作環境を提供する。

【００２２】本発明の要点について説明すると、ファクシミリ装置Ａは、パーソナルコンピュータＰＣの周辺機器として利用され、パーソナルコンピュータＰＣの使用者は、目的に応じてファクシミリ送受信機能、スキャナ機能、プリンタ機能を実行させることができる。パーソナルコンピュータＰＣには、ファクシミリ装置との間で各種データや信号を交換するためのドライバプログラムが、たとえばフロッピーディスクからのインストールによって内蔵されている。

【００２３】上記機能を実行させるにあたってパーソナルコンピュータＰＣのモニタ部には、ファクシミリ装置ＡのＲＡＭ１２が一つのストレージデバイスとしてアイコンフォルダにより表示される。ＲＡＭ１２に対応したアイコンフォルダの中には、その時点でＲＡＭ１２に格納されている各種の入出力画像データの種別がアイコンファイルとして一覧表示される。つまり、ファクシミリ受信機能やスキャナ機能により取得された入力画像データは、それぞれ一旦ＲＡＭ１２に格納された後、使用者がパーソナルコンピュータＰＣのモニタ部を通じてその存在確認することができる。そして注目すべきは、入力画像データのアイコンファイルをドラッグアンドドロップ操作などで移動させると、パーソナルコンピュータＰＣのハードディスクなどにそのアイコンファイルが示す入力画像データが取り込まれる点にある。さらに、ＲＡＭ１２に対応したアイコンフォルダ内のアイコンファイルを指定してダブルクリック操作すると、そのアイコンファイルが示す入力画像データのデータ形式に応じたアプリケーションプログラムがパーソナルコンピュータＰＣ内で自動的に起動し、入力画像データの内容がモニタ部に表示されるのである。

【００２４】一方、パーソナルコンピュータＰＣ側からファクシミリ送信機能やプリンタ機能などを実行する際には、使用者がパーソナルコンピュータＰＣ内に保存されている対象となるデータファイルをＲＡＭ１２に対応したアイコンフォルダにドラッグアンドドロップ操作によって重ねれば良い。そうすると、ファクシミリ送信すべきかプリントアウトすべきかを問うダイアログボックスが自動的に表示され、それ応じて目的とする機能をクリック操作によって選択すると、重ねたファイルデータが出力画像データとしてファクシミリ装置Ａのファクシミリ機能、プリンタ機能によりファクシミリ送信され、

あるいは印刷されるのである。

【００２５】すなわち、ＣＰＵ１０は、情報処理装置に記憶手段を外部記憶装置として認識させるとともに、その記憶手段に格納されている個々の入出力データの種別を一覧表示形式にてモニタ部に表示させる制御手段を実現している。また、パーソナルコンピュータＰＣへのインストールに用いたフロッピー（登録商標）ディスクは、データの入出力機能に応じて入出力データを格納する記憶手段を有し、モニタ部を備えた情報処理装置に接続されて各種の入出力機能を実行するデータ入出力装置を制御するためのプログラムを記憶した記憶媒体であって、上記情報処理装置に上記記憶手段を外部記憶装置として認識させるとともに、その記憶手段に格納されている個々の入出力データの種別を一覧表示形式にて上記モニタ部に表示させるための制御プログラムを含むプログラムを記憶した記憶媒体を実現している。

【００２６】次に、上記構成を有するファクシミリ装置の動作について、図面を参照して説明する。

【００２７】図２は、パーソナルコンピュータＰＣに接続された状態のファクシミリ装置Ａの各種処理手順を示したフローチャートである。なお、この処理が行われる際、パーソナルコンピュータＰＣのモニタ部には、ファクシミリ装置ＡのＲＡＭ１２がアイコンフォルダとして表示されているものとする。

【００２８】図２に示すように、ＣＰＵ１０は、常に公衆電話回線２７からの信号を監視してファクシミリデータを受信したか否かを判断している（Ｓ１）。

【００２９】ファクシミリデータを受信した場合（Ｓ１：ＹＥＳ）、ＣＰＵ１０は、そのファクシミリ受信データを印刷部２２を介してプリントアウトさせる（Ｓ２）。

【００３０】また、ＣＰＵ１０は、ファクシミリ受信データを入力画像データとしてＲＡＭ１２に保存させ（Ｓ３）、この処理を終える。処理の終了に伴って、ＣＰＵ１０は、ＲＡＭ１２に新たに保存されたデータに関する情報をパーソナルコンピュータＰＣ側に出力する。パーソナルコンピュータＰＣ内では、対応するアイコンファイルを新たに表示させるための処理を行う。これによりＲＡＭ１２に保存されたファクシミリ受信データの存在は、パーソナルコンピュータＰＣのモニタ部に表示されたＲＡＭ１２のアイコンフォルダを開くことでアイコンファイルとして確認することができ、使用者は、そのアイコンフォルダの中から所望のファクシミリ受信データに相当するアイコンファイルを操作し、特定のアプリケーションを介して再びファクシミリ受信データをプリントアウトさせたりすることができる。

【００３１】Ｓ１において、ファクシミリデータを受信しない場合（Ｓ１：ＮＯ）、ＣＰＵ１０は、使用者のキー操作に応じてスキャン動作を開始させるか否かを判断する（Ｓ４）。

【0032】使用者が所定のキーを操作してスキャン動作を開始させる場合（S4：YES）、CPU10は、読取部21を介してスキャン処理を実行する（S5）。

【0033】そして、CPU10は、スキャン処理により得られたスキャニングデータを入力画像データとしてRAM12に保存させ（S6）、この処理を終える。RAM12に保存されたスキャニングデータは、パーソナルコンピュータPCのモニタ部に表示されたRAM12のアイコンフォルダを開くことで他のデータとともにアイコンファイルとして確認することができ、使用者は、そのアイコンフォルダの中からスキャニングデータに相当するアイコンファイルを操作し、特定のアプリケーションを介してそのスキャニングデータを編集したりすることができる。

【0034】S4において、使用者により所定のキー操作がなされることもなく、スキャン動作を開始しない場合（S4：NO）、CPU10は、パーソナルコンピュータPCからプリント指令があるか否かを判断する（S7）。このプリント指令とは、先に説明したように、使用者がパーソナルコンピュータPC上のファイルを選択操作することにより、パーソナルコンピュータPCからファクシミリ装置Aに伝えられるデータ出力要求である。

【0035】プリント指令がパーソナルコンピュータPCから伝えられた場合（S7：YES）、CPU10は、そのプリント指令とともに送られてくるパーソナルコンピュータPC上のファイルデータをプリントデータとして印刷部22によりプリントアウトさせる（S8）。

【0036】さらに、CPU10は、プリントアウトされたプリントデータを出力画像データとしてRAM12に保存させ（S9）、この処理を終える。RAM12に保存されたプリントデータの存在は、パーソナルコンピュータPCのモニタ部に表示されたRAM12のアイコンフォルダを開いて他の入力画像データ等とともにアイコンファイルとして確認することができ、使用者は、そのアイコンフォルダの中から所望とするプリントデータに相当するアイコンファイルを操作し、再びプリントデータをプリントアウトさせたりすることができる。なお、各アイコンファイルには、所定の方式に基づいて、プリントデータ、受信したファクシミリデータ、およびスキャニングデータであることを示す情報や、保存された日付などの種別情報が付与され、それらに基づいて、使用者は、複数のアイコンファイルの中から必要とするファイルを選んで操作することができる。

【0037】S7において、プリント指令がパーソナルコンピュータPCから伝えられない場合（S7：NO）、CPU10は、パーソナルコンピュータPCからファクシミリ送信指令があるか否かを判断する（S10）。このファクシミリ送信指令とは、先に説明したように、使用者がパーソナルコンピュータPC上のデータファイルを選択して所定の操作することにより、パーソナルコンピュータPCからファクシミリ装置Aに伝えられるファクシミリ送信要求である。

【0038】ファクシミリ送信指令がパーソナルコンピュータPCから伝えられた場合（S10：YES）、CPU10は、そのファクシミリ指令とともに送られてくるパーソナルコンピュータPC上のファイルデータをファクシミリ送信データとしてとり込み、モデム13などを介してファクシミリ送信させる（S11）。

【0039】さらに、CPU10は、ファクシミリ送信されたファクシミリ送信データを出力画像データとしてRAM12に保存させ（S12）、この処理を終える。RAM12に保存されたファクシミリ送信データの存在は、パーソナルコンピュータPCのモニタ部に表示されたRAM12のアイコンフォルダを開いて他のデータとともにアイコンファイルとして確認することができ、使用者は、そのアイコンフォルダの中からファクシミリ送信データに相当するアイコンファイルを操作し、再びファクシミリ送信データをファクシミリ送信させたり、印刷させたりすることができる。

【0040】したがって、上記構成、動作を有するファクシミリ装置Aによれば、パーソナルコンピュータPCのモニタ部にRAM12の入出力画像データを一覧表示させることができる。つまり、RAM12にある各種の入出力画像データは、パーソナルコンピュータPCのモニタ部を通じてあたかもパーソナルコンピュータPC上に存在するかのように取り扱われ、全ての入出力画像データがパーソナルコンピュータPCにより一元管理されるので、これらの入出力画像データを基にして各種入出力機能を実行させる際の操作手続が簡単となり、マンマシン・インターフェースを改善することができる。

【0041】なお、本発明は、上記の実施形態に限定されるものではない。

【0042】たとえば、データ入出力装置としては、ファクシミリ装置に限らず、2以上のデータ入出力機能を複合的に有するものであればその他の装置でも適用可能である。

【0043】スキャン機能に基づくスキャン動作を開始させる際には、使用者がパーソナルコンピュータPCを通じてその動作を開始させても良い。

【0044】パーソナルコンピュータPCの操作に応じて出力されるプリントデータやファクシミリ送信データなどの出力画像データは、RAM12に保存することなく、単にプリントアウトやファクシミリ送信のみに提供されるものとしても良い。

【0045】RAM12に相当するアイコンフォルダの中には、入力画像データおよび出力画像データが併存する状況とされるが、入力および出力を区別できるように別々のサブフォルダに配置されるようにしても良い。ま

た、ファクシミリデータ、プリントデータ、およびスキャニングデータといったデータ種別ごと、あるいは保存された日付ごとにアイコンフォルダを複数個作成するものとし、RAM12内に保存されている入出力画像データをアイコンフォルダの種別によって振り分け、該当するフォルダにそれぞれアイコンファイルとして表示するような構成としても良い。これにより、使用者が必要とするアイコンファイルが見つけやすくなるとともに、日付の古いファイルを一括して削除するような処理を行いやすくなる。また、入力画像データおよび出力画像データは、サムネイル方式で表示されるとしても良い。

【0046】その他、上記した本発明の特徴部分以外に係る事項については、本発明の効果を損なわない限り適宜設計変更できるものである。

【0047】

【発明の効果】以上説明したように、請求項1に記載した発明のデータ入出力装置によれば、情報処理装置の一例として、たとえばパーソナルコンピュータと接続され、そのパーソナルコンピュータのモニタ部に入出力データの種別を一覧表示させることができる。つまり、データ入出力装置の記憶手段に格納された入出力データは、パーソナルコンピュータのモニタ部を通じてあたかもパーソナルコンピュータ上に存在するかのように取り扱われ、全ての入出力データがパーソナルコンピュータにより一元管理されるので、これらの入出力データを基にして各種入出力機能を実行させる際のマンマシン・インターフェースを改善することができる。

【0048】また、請求項2に記載した発明のデータ入出力装置によれば、請求項1に記載のデータ入出力装置による効果に加えて、データ入出力装置の記憶手段に格納された入出力データは、パーソナルコンピュータなどの情報処理装置の直接取り扱い可能なデータ形式とされるので、煩わしいデータ形式の変換処理などを行うことなく、そのまま入力処理や出力処理に入出力データを用いることができる。

【0049】さらに、請求項3に記載した発明のデータ入出力装置によれば、請求項1または請求項2に記載のデータ入出力装置による効果に加えて、スキャナ機能またはファクシミリ受信機能に基づいて得られた入力画像データを自己の記憶手段に格納させたまま、パーソナル

コンピュータなどを介して一元的に管理することができる。

【0050】また、請求項4に記載した発明のデータ入出力装置によれば、請求項1ないし請求項3のいずれかに記載のデータ入出力装置による効果に加えて、たとえばパーソナルコンピュータなどからの出力操作に応じて出力画像データが記憶手段に格納された場合、その出力画像データを使用者が目的とするプリンタ機能またはファクシミリ送信機能のいずれかにより処理させることができる。

【0051】さらに、請求項5に記載した発明の記憶媒体によれば、記憶されたプログラムに基づいてCPUを動作させることにより、請求項1に記載のデータ入出力装置の動作を実現することができる。
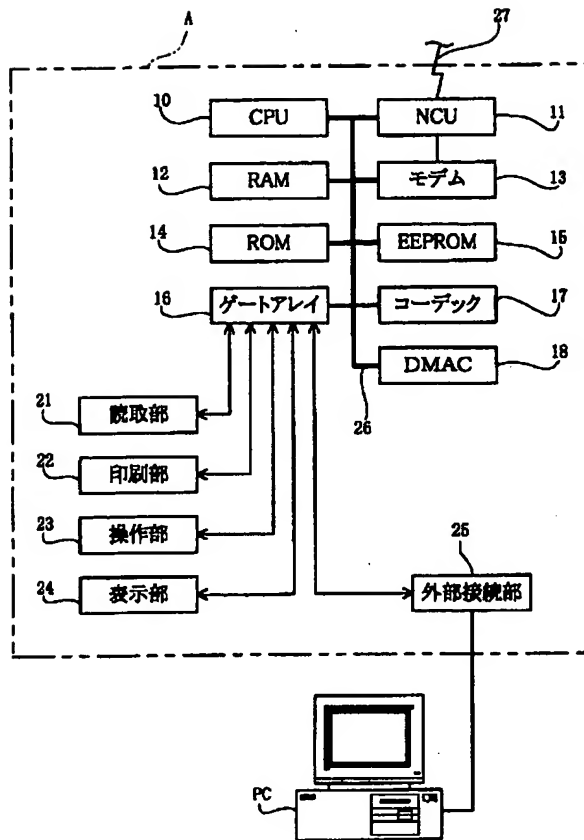
【図面の簡単な説明】

【図1】本発明に係るデータ入出力装置の一実施形態として、ファクシミリ装置の回路構成を示したブロック図である。

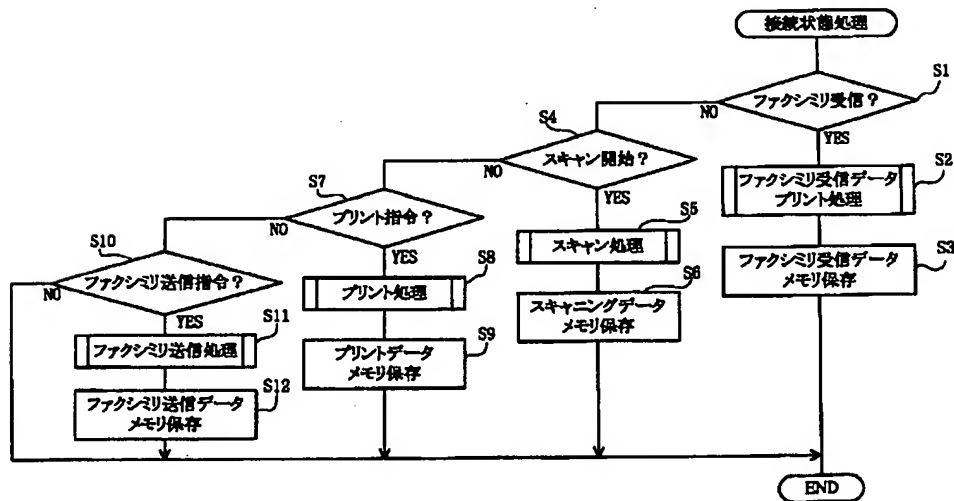【図2】パーソナルコンピュータに接続された状態のファクシミリ装置の各種処理手順を示したフローチャートである。

【符号の説明】

10　CPU
11　NCU
12　RAM
13　モデム
14　ROM
15　EEPROM
16　ゲートアレイ
17　コーデック
18　DMAC
21　読取部
22　印刷部
23　操作部
24　表示部
25　外部接続部
27　公衆電話回線
A　　ファクシミリ装置
PC　パーソナルコンピュータ

【図1】

【図2】

フロントページの続き

F ターム(参考)　5B014　EA01　EB01　EB04　FA12　FB04
　　　　　　　　　　　　GD02　GD05　GD13　GD18　GD22
　　　　　　　　　　　　GD23　GD32　HC12
　　　　　　　　　5B065　BA01　CA13　CA18　CC08　CE12
　　　　　　　　　　　　ZA01　ZA15
　　　　　　　　　5E501　AA02　AB04　AC24　AC35　CA02
　　　　　　　　　　　　DA11　FA23

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(72)Inventor : HORI MASAAKI

(54) DATA INPUT/OUTPUT DEVICE AND STORAGE MEDIUM

(57)Abstract:
PROBLEM TO BE SOLVED: To provide a data input/output device which can improve a man- machine interface, when various input/output functions are executed from the outside.
SOLUTION: A facsimile machine A as a data input/output device, which has a RAM 12 for storing input/output data according to an input/output function for data and is connected to a personal computer PC, equipped with a monitor part for executing various input/output functions. A CPU 10 makes the personal computer PC recognize the RAM 12 as a storage device and displays the kinds of individual input/output data, which are stored in the RAM 12 on the monitor part in a list format.
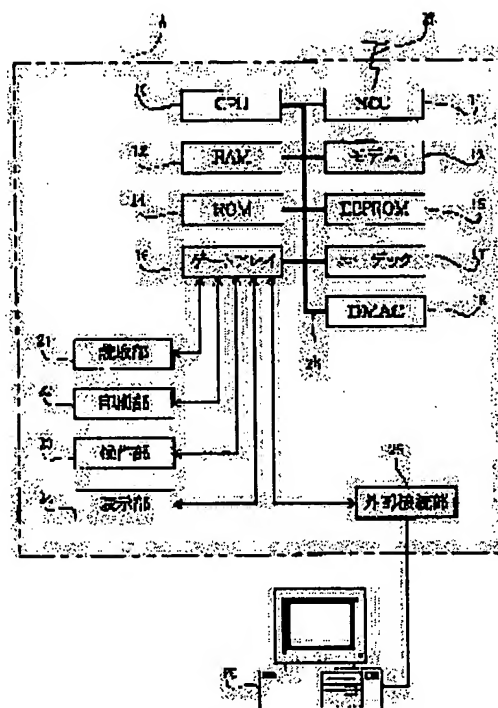
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CLAIMS

[Claim(s)]
[Claim 1] The data input output equipment are data input output equipment which has a storage means store a I / O data according to the I/O function of data, is connected to the information processor equipped with the monitor section, and performs various kinds of I/O functions, and carry out having the control means which displays on the above-mentioned monitor section the classification of each I / O data stored in the storage means in list display form while making the above-mentioned information processor recognize the above-mentioned storage means as external storage as the description.
[Claim 2] The above-mentioned control means is data input output equipment according to claim 1 which makes a I / O data store in the above-mentioned storage means as a data format [handling / the above-mentioned information processor / data format / direct].
[Claim 3] The above-mentioned control means is data input output equipment according to claim 1 or 2 which makes the input data obtained based on scanner ability or a facsimile reception function store in the above-mentioned storage means.
[Claim 4] The above-mentioned control means is data input output equipment according to claim 1 to 3 which chooses and performs any 1 of the printer ability which should output the output data, or the facsimile transmitting functions when output data are stored in the above-mentioned storage means according to the output actuation from the above-mentioned information processor.
[Claim 5] It has a storage means to store a I / O data according to the I/O function of data. It is the storage which memorized the program for controlling the data input output equipment which is connected to the information processor equipped with the monitor section, and performs various kinds of I/O functions. The storage characterized by memorizing the program containing the control program for displaying on the above-mentioned monitor section the classification of each I / O data stored in the storage means in a list display format while making the above-mentioned information processor recognize the above-mentioned storage means as external storage.

[Translation done.]

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DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the storage which memorized the program for controlling data input output equipment equipped with various I/O functions, such as for example, a facsimile transceiver function, scanner ability, printer ability, or a copy function, and its data input output equipment.
[0002]
[Description of the Prior Art] It connected with the personal computer etc., and the facsimile apparatus which is one of the data input output equipment is usable, and is equipped with various kinds of I/O functions of others and scanner ability, printer ability, or a copy function. [function / used as a key objective / facsimile transceiver]
[0003] In case activation of this kind of each function is enabled based on the command from a personal computer, for example, a facsimile transceiver function is performed In case I/O image data is transmitted and received according to the application program for facsimile transmission and reception and scanner ability is performed Input image data is incorporated according to the application program corresponding to TWAIN (Technology Without Any InterrestedName : specification for image incorporation). In case printer ability is performed, the spool transfer of the output image data is carried out through a device driver. That is, each I/O function is controlled according to an individual through a personal computer, respectively, and after a user chooses the application program according to the function made into the purpose, he starts the program and makes the function of the purpose start.
[0004]
[Problem(s) to be Solved by the Invention] Here, in case various I/O functions are performed through a personal computer as mentioned above, the actuation which chooses the application program according to the function made into the purpose is forced upon a user, and the various actuation according to I/O various functions is needed for a user. Therefore, in this kind of facsimile apparatus, the point that the man machine interface at the time of using as a peripheral device of a personal computer should have been improved was demanded.
[0005] This invention is proposed in view of the above-mentioned point, and aims at offering the storage which memorized the program for controlling the data input output equipment which can improve the man machine interface at the time of performing various I/O functions from the outside, and data input output equipment.
[0006]
[Means for Solving the Problem] In order to attain the above-mentioned purpose, the data input output equipment of invention indicated to claim 1 It has a storage means to store a I / O data according to the I/O function of data. While being data input output equipment which is connected to the information processor equipped with the monitor section, and performs various kinds of I/O functions and making the above-mentioned information processor recognize the above-mentioned storage means as external storage It is characterized by having the control means which displays on the above-mentioned monitor section the classification of each I / O data stored in the storage means in a list display format.
[0007] According to such data input output equipment, it connects with a personal computer and the monitor section of the personal computer can be made to indicate the classification of a I / O data by list as an example of an information processor. That is, since it is dealt with as if it existed on the personal computer through the monitor section of a personal computer, and unitary management of all the I / O datas is carried out with a personal computer, the I / O data stored in the storage means of data input output equipment can improve the man machine interface at the time of performing various I/O functions based on these I / O datas.
[0008] Moreover, the data input output equipment of invention indicated to claim 2 is data input output equipment according to claim 1, and the above-mentioned control means makes a I / O data store in the above-mentioned storage

means as a data format [handling / the above-mentioned information processor / data format / direct].

[0009] According to such data input output equipment, the I / O data which was stored in the storage means of data input output equipment in addition to the effectiveness by data input output equipment according to claim 1 can use a I / O data for input process or output processing as it is, without performing transform processing of a troublesome data format etc., since it considers as the data format in which the direct handling of information processors, such as a personal computer, is possible.

[0010] Furthermore, the data input output equipment of invention indicated to claim 3 is data input output equipment according to claim 1 or 2, and the above-mentioned control means makes the input data obtained based on scanner ability or a facsimile reception function store in the above-mentioned storage means.

[0011] According to such data input output equipment, while the input image data obtained based on scanner ability or a facsimile reception function had been made to store in the storage means of self in addition to the effectiveness by data input output equipment according to claim 1 or 2, it can manage unitary through a personal computer etc.

[0012] Moreover, the data input output equipment of invention indicated to claim 4 is data input output equipment according to claim 1 to 3, and when output data are stored in the above-mentioned storage means according to the output actuation from the above-mentioned information processor, the above-mentioned control means chooses any 1 of the printer ability which should output the output data, or the facsimile transmitting functions, and is performed.

[0013] When output image data is stored in a storage means according to the output actuation from a personal computer etc. in addition to the effectiveness by data input output equipment according to claim 1 to 3, a user can make the output image data process by either the printer ability made into the purpose, or the facsimile transmitting function according to such data input output equipment.

[0014] Furthermore, the storage of invention indicated to claim 5 It has a storage means to store a I / O data according to the I/O function of data. It is the storage which memorized the program for controlling the data input output equipment which is connected to the information processor equipped with the monitor section, and performs various kinds of I/O functions. While making the above-mentioned information processor recognize the above-mentioned storage means as external storage, it is characterized by memorizing the program containing the control program for displaying on the above-mentioned monitor section the classification of each I / O data stored in the storage means in a list display format.

[0015] According to such a storage, actuation of data input output equipment according to claim 1 is realizable by operating CPU based on the memorized program.

[0016]

[Embodiment of the Invention] Hereafter, the gestalt of desirable operation of this invention is concretely explained with reference to a drawing.

[0017] Drawing 1 is the block diagram having shown the circuitry of facsimile apparatus as 1 operation gestalt of the data input output equipment concerning this invention. In addition, this facsimile apparatus A is complexly equipped with scanner ability besides the facsimile transceiver function used as a key objective, printer ability, and various kinds of I/O functions further of a copy function.

[0018] As shown in drawing 1 , facsimile apparatus A possesses CPU10, NCU11, RAM12, a modem 13, ROM14 and EEPROM15, a gate array 16, a codec 17, DMAC18, a read station 21, the printing section 22, a control unit 23, a display 24, the external connection 25, etc., and the outline configuration is carried out. CPU10, NCU11, RAM12, a modem 13, ROM14 and EEPROM15, a gate array 16, a codec 17, and DMAC18 are mutually connected by the bus 26. An address bus, a data bus, and a control signal line are contained in a bus 26. A read station 21, the printing section 22, the control unit 23, the display 24, and the external connection 25 are connected to the gate array 16. The dial-up line 27 is connected to NCU11.

[0019] CPU10 controls actuation of the whole facsimile apparatus which realizes various kinds of data I/O functions. It connects with a dial-up line 27, and NCU11 performs network control. RAM12 is used as the working area of CPU10, a storing field of various data, etc., and power-source backup is given. A modem 13 performs a modulation, a recovery, etc. of facsimile data. ROM14 has memorized data, such as an executive program of CPU10, and the set point. EEPROM15 memorizes various kinds of flags, setting data, etc. A gate array 16 functions as an interface of CPU10 and each part 21-25. A codec 17 performs coding and a decryption of facsimile data. DMAC18 mainly performs the writing and read-out of data to RAM12.

[0020] A read station 21 is equipped with the image sensors which read an image in a manuscript etc., and mainly realizes scanner ability. The printing section 22 is equipped with the print station of the ink jet method which prints an image, or a thermal method on a form, and mainly realizes printer ability. A control unit 23 is for telling the actuation signal according to a user's key stroke etc. to CPU10. The display 24 is equipped with LCD etc. and displays the status

information of facsimile apparatus A etc. The external connection 25 is used as a connection port of the personal computer PC to facsimile apparatus A.

[0021] On the other hand, although especially the personal computer PC connected to facsimile apparatus A is not explained in full detail, it is equipped with known hardware and software, and is equipped with the monitor sections, such as a CRT (Cathode Ray Tube: cathode-ray tube) display or LCD (Liquid Crystal Display: liquid crystal display display), at least. Moreover, a personal computer PC offers the operating environment of the event driven method based on the so-called icon and the so-called window by OS (Operating System: basic system program) corresponding to GUI (Graphical User Interface).

[0022] If the main point of this invention is explained, facsimile apparatus A is used as a peripheral device of a personal computer PC, and the user of a personal computer PC can perform facsimile transceiver function, scanner ability, and printer ability according to the purpose. The driver program for exchanging various data and a signal between facsimile apparatus is built in the personal computer PC by install from a floppy disk.

[0023] In performing the above-mentioned function, RAM12 of facsimile apparatus A is displayed on the monitor section of a personal computer PC by the icon folder as one storage device. Into the icon folder corresponding to RAM12, a list indication of the classification of various kinds of I/O image data stored in RAM12 at the time is given as an icon file. that is, a user once the input image data acquired by a facsimile reception function and scanner ability was stored in RAM12, respectively -- the monitor section of a personal computer PC -- leading -- the -- an existence check can be carried out. and -- it should observe -- when the icon file of input image data is moved by drag-and-drop actuation etc., it is in the point that the input image data which the icon file shows to the hard disk of a personal computer PC etc. is incorporated. Furthermore, if the icon file in the icon folder corresponding to RAM12 is specified and double click actuation is carried out, the application program according to the data format of input image data which the icon file shows will start automatically within a personal computer PC, and the contents of input image data will be displayed on the monitor section.

[0024] On the other hand, in case a facsimile transmitting function, printer ability, etc. are performed from a personal computer PC side, a user should just put the data file used as the object saved in the personal computer PC by drag-and-drop actuation on the icon folder corresponding to RAM12. If the dialog box which will ask [which should be carried out facsimile transmission / or or] whether print-out should be carried out if it does so is displayed automatically, swerves and responds and the target function is chosen by click actuation, facsimile transmission will be carried out by the facsimile function of facsimile apparatus A, and printer ability as output image data, or piled-up file data will be printed.

[0025] That is, CPU10 has realized the control means which displays on the monitor section the classification of each I / O data stored in the storage means in a list display format while making an information processor recognize a storage means as external storage. Moreover, the floppy (trademark) disk used for install in a personal computer PC It has a storage means to store a I / O data according to the I/O function of data. It is the storage which memorized the program for controlling the data input output equipment which is connected to the information processor equipped with the monitor section, and performs various kinds of I/O functions. While making the above-mentioned information processor recognize the above-mentioned storage means as external storage, the storage which memorized the program containing the control program for displaying on the above-mentioned monitor section the classification of each I / O data stored in the storage means in a list display format is realized.

[0026] Next, actuation of the facsimile apparatus which has the above-mentioned configuration is explained with reference to a drawing.

[0027] Drawing 2 is the flow chart which showed the various procedure of facsimile apparatus A in the condition of having connected with the personal computer PC. In addition, in case this processing is performed, RAM12 of facsimile apparatus A shall be displayed on the monitor section of a personal computer PC as an icon folder.

[0028] As shown in drawing 2 , it judges whether CPU10 always supervised the signal from a dial-up line 27, and facsimile data were received (S1).

[0029] When facsimile data are received (S1:YES), CPU10 makes the facsimile received data print out through the printing section 22 (S2).

[0030] Moreover, CPU10 is made to save by making facsimile received data into input image data at RAM12 (S3), and finishes this processing. CPU10 outputs the information about the data newly saved at RAM12 to a personal computer PC side with termination of processing. Within a personal computer PC, processing for newly displaying a corresponding icon file is performed. Existence of the facsimile received data saved by this at RAM12 can be checked as an icon file by opening the icon folder of RAM12 displayed on the monitor section of a personal computer PC, and a user can operate the icon file which is equivalent to desired facsimile received data out of the icon folder, and can make

facsimile received data print out again through specific application.

[0031] In S1, when not receiving facsimile data (S1:NO), CPU10 judges whether scanning actuation is made to start according to a user's key stroke (S4).

[0032] When a user operates a predetermined key and makes scanning actuation start (S4:YES), CPU10 performs scanning and processing through a read station 21 (S5).

[0033] And CPU10 is made to save at RAM12 by making into input image data the scanning data obtained by scanning and processing (S6), and finishes this processing. The scanning data saved at RAM12 can be checked as an icon file with other data by opening the icon folder of RAM12 displayed on the monitor section of a personal computer PC, and a user can operate the icon file which is equivalent to scanning data out of the icon folder, and can edit the scanning data through specific application.

[0034] In S4, when not starting scanning actuation, without a predetermined key stroke being made by the user (S4:NO), it judges whether CPU10 has a print command from a personal computer PC (S7). As explained previously, this print command is a data query told to facsimile apparatus A from a personal computer PC, when a user does selection actuation of the file on a personal computer PC.

[0035] When a print command is told from a personal computer PC (S7:YES), CPU10 is made to print out by the printing section 22 by using as print data the file data on the personal computer PC sent with the print command (S8).

[0036] Furthermore, CPU10 is made to save by making the printed-out print data into output image data at RAM12, and finishes (S9) and this processing. Existence of the print data saved at RAM12 can open the icon folder of RAM12 displayed on the monitor section of a personal computer PC, and can check it as an icon file with other input image data etc., and a user can operate the icon file equivalent to the print data considered as a request out of the icon folder, and can make print data print out again. In addition, based on a predetermined method, the information which shows that they are print data, the received facsimile data, and scanning data, and classification information, such as a saved date, are given to each icon file, and a user can choose and operate the file needed out of two or more icon files based on them.

[0037] In S7, when a print command is not told from a personal computer PC (S7:NO), it judges whether CPU10 has a facsimile transmitting command from a personal computer PC (S10). As explained previously, this facsimile transmitting command is a facsimile Request to Send told to facsimile apparatus A from a personal computer PC, when a user chooses the data file on a personal computer PC and predetermined operates it.

[0038] When a facsimile transmitting command is told from a personal computer PC (S10:YES), CPU10 takes in the file data on the personal computer PC sent with the facsimile command as facsimile transmit data, and it is made it to carry out facsimile transmission through a modem 13 etc. (S11).

[0039] Furthermore, CPU10 is made to save at RAM12 by making into output image data the facsimile transmit data by which facsimile transmission was carried out (S12), and finishes this processing. A user operates the icon file which is equivalent to facsimile transmit data out of the icon folder, and existence of the facsimile transmit data saved at RAM12 can open the icon folder of RAM12 displayed on the monitor section of a personal computer PC, and can check it as an icon file with other data, and he can make facsimile transmit data to carry out facsimile transmission or print again.

[0040] Therefore, according to facsimile apparatus A which has the above-mentioned configuration and actuation, the monitor section of a personal computer PC can be made to indicate the I/O image data of RAM12 by list. That is, since it is dealt with as if it existed on the personal computer PC through the monitor section of a personal computer PC, and unitary management of all the I/O image data is carried out with a personal computer PC, the actuation procedure at the time of performing various I/O functions based on these I/O image data becomes easy, and various kinds of I/O image data in RAM12 can improve a man machine interface.

[0041] In addition, this invention is not limited to the above-mentioned operation gestalt.

[0042] For example, as data input output equipment, if it has complexly two or more [not only facsimile apparatus but] data I/O functions, it is applicable with other equipments.

[0043] In case the scanning actuation based on a scanning function is made to start, a user may make the actuation start through a personal computer PC.

[0044] Output image data outputted according to actuation of a personal computer PC, such as print data and facsimile transmit data, is good also as that with which only print-out and facsimile transmission are provided, without saving at RAM12.

[0045] Although it considers as the situation that input image data and output image data coexist, into the icon folder equivalent to RAM12, you may make it arranged in a separate subfolder so that an input and an output can be distinguished. Moreover, it is good also as a configuration which distributes every [, such as facsimile data, print data, and scanning data,] data classification and the I/O image data which shall create two or more icon folders for every

saved date, and is saved in RAM12 by classification of an icon folder, and displays it on the corresponding folder as an icon file, respectively. While this becomes easy to find the icon file which a user needs, it becomes easy to perform processing which deletes the old file of the date collectively. Moreover, though input image data and output image data are expressed as a thumbnail method, they are good.

[0046] In addition, about the matter which starts in addition to the description part of above-mentioned this invention, unless the effectiveness of this invention is spoiled, a design change can be carried out suitably.

[0047]

[Effect of the Invention] According to the data input output equipment of invention indicated to claim 1, it connects with a personal computer and the monitor section of the personal computer can be made to indicate the classification of a I / O data by list as an example of an information processor, as explained above. That is, since it is dealt with as if it existed on the personal computer through the monitor section of a personal computer, and unitary management of all the I / O datas is carried out with a personal computer, the I / O data stored in the storage means of data input output equipment can improve the man machine interface at the time of performing various I/O functions based on these I / O datas.

[0048] Moreover, according to the data input output equipment of invention indicated to claim 2, the I / O data which was stored in the storage means of data input output equipment in addition to the effectiveness by data input output equipment according to claim 1 can use a I / O data for input process or output processing as it is, without performing transform processing of a troublesome data format etc., since it considers as the data format in which the direct handling of information processors, such as a personal computer, is possible.

[0049] Furthermore, according to the data input output equipment of invention indicated to claim 3, while the input image data obtained based on scanner ability or a facsimile reception function had been made to store in the storage means of self in addition to the effectiveness by data input output equipment according to claim 1 or 2, it can manage unitary through a personal computer etc.

[0050] Moreover, when output image data is stored in a storage means according to the output actuation from a personal computer etc. in addition to the effectiveness by data input output equipment according to claim 1 to 3, a user can make the output image data process by either the printer ability made into the purpose, or the facsimile transmitting function according to the data input output equipment of invention indicated to claim 4.

[0051] Furthermore, according to the storage of invention indicated to claim 5, actuation of data input output equipment according to claim 1 is realizable by operating CPU based on the memorized program.

[Translation done.]

* NOTICES *

1.This document has been translated by computer. So the translation may not reflect the original precisely.
2.**** shows the word which can not be translated.
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DRAWINGS
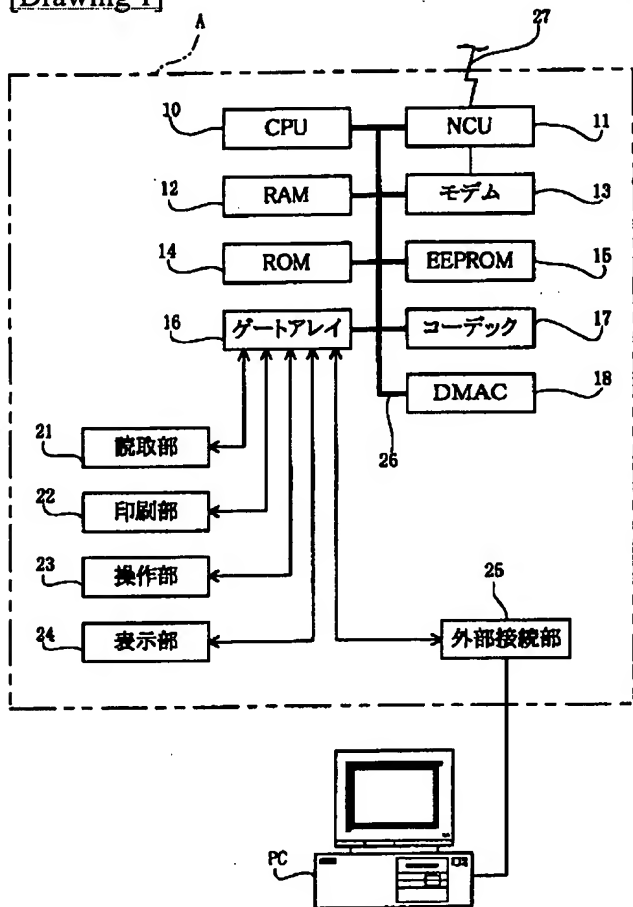

[Drawing 1]

[Drawing 2]

[Translation done.]

* NOTICES *

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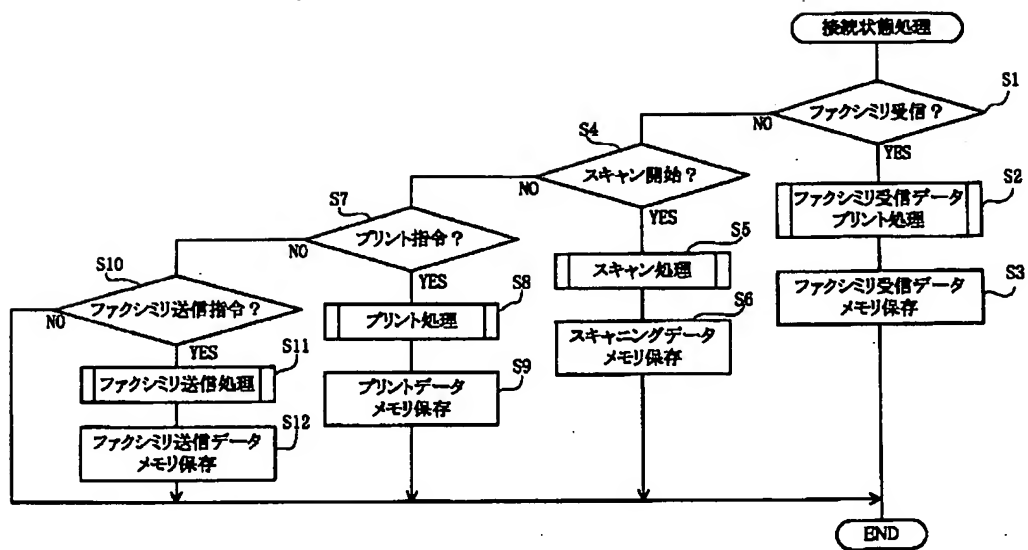damages caused by the use of this translation.

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precisely.
2.**** shows the word which can not be translated.
3.In the drawings, any words are not translated.

DETAILED DESCRIPTION

[Detailed Description of the Invention]
[0001]
[Field of the Invention] This invention relates to the storage which memorized the program for
controlling data input output equipment equipped with various I/O functions, such as for example, a
facsimile transceiver function, scanner ability, printer ability, or a copy function, and its data input
output equipment.
[0002]
[Description of the Prior Art] It connected with the personal computer etc., and the facsimile apparatus
which is one of the data input output equipment is usable, and is equipped with various kinds of I/O
functions of others and scanner ability, printer ability, or a copy function. [function / used as a key
objective / facsimile transceiver]
[0003] In case activation of this kind of each function is enabled based on the command from a personal
computer, for example, a facsimile transceiver function is performed In case I/O image data is
transmitted and received according to the application program for facsimile transmission and reception
and scanner ability is performed Input image data is incorporated according to the application program
corresponding to TWAIN (Technology Without Any InterrestedName : specification for image
incorporation). In case printer ability is performed, the spool transfer of the output image data is carried
out through a device driver. That is, each I/O function is controlled according to an individual through a
personal computer, respectively, and after a user chooses the application program according to the
function made into the purpose, he starts the program and makes the function of the purpose start.
[0004]
[Problem(s) to be Solved by the Invention] Here, in case various I/O functions are performed through a
personal computer as mentioned above, the actuation which chooses the application program according
to the function made into the purpose is forced upon a user, and the various actuation according to I/O
various functions is needed for a user. Therefore, in this kind of facsimile apparatus, the point that the
man machine interface at the time of using as a peripheral device of a personal computer should have
been improved was demanded.
[0005] This invention is proposed in view of the above-mentioned point, and aims at offering the storage
which memorized the program for controlling the data input output equipment which can improve the
man machine interface at the time of performing various I/O functions from the outside, and data input
output equipment.
[0006]
[Means for Solving the Problem] In order to attain the above-mentioned purpose, the data input output
equipment of invention indicated to claim 1 It has a storage means to store a I / O data according to the
I/O function of data. While being data input output equipment which is connected to the information
processor equipped with the monitor section, and performs various kinds of I/O functions and making
the above-mentioned information processor recognize the above-mentioned storage means as external
storage It is characterized by having the control means which displays on the above-mentioned monitor

section the classification of each I / O data stored in the storage means in a list display format.

[0007] According to such data input output equipment, it connects with a personal computer and the monitor section of the personal computer can be made to indicate the classification of a I / O data by list as an example of an information processor. That is, since it is dealt with as if it existed on the personal computer through the monitor section of a personal computer, and unitary management of all the I / O datas is carried out with a personal computer, the I / O data stored in the storage means of data input output equipment can improve the man machine interface at the time of performing various I/O functions based on these I / O datas.

[0008] Moreover, the data input output equipment of invention indicated to claim 2 is data input output equipment according to claim 1, and the above-mentioned control means makes a I / O data store in the above-mentioned storage means as a data format [handling / the above-mentioned information processor / data format / direct].

[0009] According to such data input output equipment, the I / O data which was stored in the storage means of data input output equipment in addition to the effectiveness by data input output equipment according to claim 1 can use a I / O data for input process or output processing as it is, without performing transform processing of a troublesome data format etc., since it considers as the data format in which the direct handling of information processors, such as a personal computer, is possible.

[0010] Furthermore, the data input output equipment of invention indicated to claim 3 is data input output equipment according to claim 1 or 2, and the above-mentioned control means makes the input data obtained based on scanner ability or a facsimile reception function store in the above-mentioned storage means.

[0011] According to such data input output equipment, while the input image data obtained based on scanner ability or a facsimile reception function had been made to store in the storage means of self in addition to the effectiveness by data input output equipment according to claim 1 or 2, it can manage unitary through a personal computer etc.

[0012] Moreover, the data input output equipment of invention indicated to claim 4 is data input output equipment according to claim 1 to 3, and when output data are stored in the above-mentioned storage means according to the output actuation from the above-mentioned information processor, the above-mentioned control means chooses any 1 of the printer ability which should output the output data, or the facsimile transmitting functions, and is performed.

[0013] When output image data is stored in a storage means according to the output actuation from a personal computer etc. in addition to the effectiveness by data input output equipment according to claim 1 to 3, a user can make the output image data process by either the printer ability made into the purpose, or the facsimile transmitting function according to such data input output equipment.

[0014] Furthermore, the storage of invention indicated to claim 5 It has a storage means to store a I / O data according to the I/O function of data. It is the storage which memorized the program for controlling the data input output equipment which is connected to the information processor equipped with the monitor section, and performs various kinds of I/O functions. While making the above-mentioned information processor recognize the above-mentioned storage means as external storage, it is characterized by memorizing the program containing the control program for displaying on the above-mentioned monitor section the classification of each I / O data stored in the storage means in a list display format.

[0015] According to such a storage, actuation of data input output equipment according to claim 1 is realizable by operating CPU based on the memorized program.

[0016]
[Embodiment of the Invention] Hereafter, the gestalt of desirable operation of this invention is concretely explained with reference to a drawing.

[0017] Drawing 1 is the block diagram having shown the circuitry of facsimile apparatus as 1 operation gestalt of the data input output equipment concerning this invention. In addition, this facsimile apparatus A is complexly equipped with scanner ability besides the facsimile transceiver function used as a key objective, printer ability, and various kinds of I/O functions further of a copy function.

[0018] As shown in <u>drawing 1</u> , facsimile apparatus A possesses CPU10, NCU11, RAM12, a modem 13, ROM14 and EEPROM15, a gate array 16, a codec 17, DMAC18, a read station 21, the printing section 22, a control unit 23, a display 24, the external connection 25, etc., and the outline configuration is carried out. CPU10, NCU11, RAM12, a modem 13, ROM14 and EEPROM15, a gate array 16, a codec 17, and DMAC18 are mutually connected by the bus 26. An address bus, a data bus, and a control signal line are contained in a bus 26. A read station 21, the printing section 22, the control unit 23, the display 24, and the external connection 25 are connected to the gate array 16. The dial-up line 27 is connected to NCU11.

[0019] CPU10 controls actuation of the whole facsimile apparatus which realizes various kinds of data I/O functions. It connects with a dial-up line 27, and NCU11 performs network control. RAM12 is used as the working area of CPU10, a storing field of various data, etc., and power-source backup is given. A modem 13 performs a modulation, a recovery, etc. of facsimile data. ROM14 has memorized data, such as an executive program of CPU10, and the set point. EEPROM15 memorizes various kinds of flags, setting data, etc. A gate array 16 functions as an interface of CPU10 and each part 21-25. A codec 17 performs coding and a decryption of facsimile data. DMAC18 mainly performs the writing and read-out of data to RAM12.

[0020] A read station 21 is equipped with the image sensors which read an image in a manuscript etc., and mainly realizes scanner ability. The printing section 22 is equipped with the print station of the ink jet method which prints an image, or a thermal method on a form, and mainly realizes printer ability. A control unit 23 is for telling the actuation signal according to a user's key stroke etc. to CPU10. The display 24 is equipped with LCD etc. and displays the status information of facsimile apparatus A etc. The external connection 25 is used as a connection port of the personal computer PC to facsimile apparatus A.

[0021] On the other hand, although especially the personal computer PC connected to facsimile apparatus A is not explained in full detail, it is equipped with known hardware and software, and is equipped with the monitor sections, such as a CRT (Cathode Ray Tube: cathode-ray tube) display or LCD (Liquid Crystal Display: liquid crystal display display), at least. Moreover, a personal computer PC offers the operating environment of the event driven method based on the so-called icon and the so-called window by OS (Operating System: basic system program) corresponding to GUI (Graphical User Interface).

[0022] If the main point of this invention is explained, facsimile apparatus A is used as a peripheral device of a personal computer PC, and the user of a personal computer PC can perform facsimile transceiver function, scanner ability, and printer ability according to the purpose. The driver program for exchanging various data and a signal between facsimile apparatus is built in the personal computer PC by install from a floppy disk.

[0023] In performing the above-mentioned function, RAM12 of facsimile apparatus A is displayed on the monitor section of a personal computer PC by the icon folder as one storage device. Into the icon folder corresponding to RAM12, a list indication of the classification of various kinds of I/O image data stored in RAM12 at the time is given as an icon file. that is, a user once the input image data acquired by a facsimile reception function and scanner ability was stored in RAM12, respectively -- the monitor section of a personal computer PC -- leading -- the -- an existence check can be carried out. and -- it should observe -- when the icon file of input image data is moved by drag-and-drop actuation etc., it is in the point that the input image data which the icon file shows to the hard disk of a personal computer PC etc. is incorporated. Furthermore, if the icon file in the icon folder corresponding to RAM12 is specified and double click actuation is carried out, the application program according to the data format of input image data which the icon file shows will start automatically within a personal computer PC, and the contents of input image data will be displayed on the monitor section.

[0024] On the other hand, in case a facsimile transmitting function, printer ability, etc. are performed from a personal computer PC side, a user should just put the data file used as the object saved in the personal computer PC by drag-and-drop actuation on the icon folder corresponding to RAM12. If the dialog box which will ask [which should be carried out facsimile transmission / or or] whether print-

out should be carried out if it does so is displayed automatically, swerves and responds and the target function is chosen by click actuation, facsimile transmission will be carried out by the facsimile function of facsimile apparatus A, and printer ability as output image data, or piled-up file data will be printed.

[0025] That is, CPU10 has realized the control means which displays on the monitor section the classification of each I / O data stored in the storage means in a list display format while making an information processor recognize a storage means as external storage. Moreover, the floppy (trademark) disk used for install in a personal computer PC It has a storage means to store a I / O data according to the I/O function of data. It is the storage which memorized the program for controlling the data input output equipment which is connected to the information processor equipped with the monitor section, and performs various kinds of I/O functions. While making the above-mentioned information processor recognize the above-mentioned storage means as external storage, the storage which memorized the program containing the control program for displaying on the above-mentioned monitor section the classification of each I / O data stored in the storage means in a list display format is realized.

[0026] Next, actuation of the facsimile apparatus which has the above-mentioned configuration is explained with reference to a drawing.

[0027] Drawing 2 is the flow chart which showed the various procedure of facsimile apparatus A in the condition of having connected with the personal computer PC. In addition, in case this processing is performed, RAM12 of facsimile apparatus A shall be displayed on the monitor section of a personal computer PC as an icon folder.

[0028] As shown in drawing 2 , it judges whether CPU10 always supervised the signal from a dial-up line 27, and facsimile data were received (S1).

[0029] When facsimile data are received (S1:YES), CPU10 makes the facsimile received data print out through the printing section 22 (S2).

[0030] Moreover, CPU10 is made to save by making facsimile received data into input image data at RAM12 (S3), and finishes this processing. CPU10 outputs the information about the data newly saved at RAM12 to a personal computer PC side with termination of processing. Within a personal computer PC, processing for newly displaying a corresponding icon file is performed. Existence of the facsimile received data saved by this at RAM12 can be checked as an icon file by opening the icon folder of RAM12 displayed on the monitor section of a personal computer PC, and a user can operate the icon file which is equivalent to desired facsimile received data out of the icon folder, and can make facsimile received data print out again through specific application.

[0031] In S1, when not receiving facsimile data (S1:NO), CPU10 judges whether scanning actuation is made to start according to a user's key stroke (S4).

[0032] When a user operates a predetermined key and makes scanning actuation start (S4:YES), CPU10 performs scanning and processing through a read station 21 (S5).

[0033] And CPU10 is made to save at RAM12 by making into input image data the scanning data obtained by scanning and processing (S6), and finishes this processing. The scanning data saved at RAM12 can be checked as an icon file with other data by opening the icon folder of RAM12 displayed on the monitor section of a personal computer PC, and a user can operate the icon file which is equivalent to scanning data out of the icon folder, and can edit the scanning data through specific application.

[0034] In S4, when not starting scanning actuation, without a predetermined key stroke being made by the user (S4:NO), it judges whether CPU10 has a print command from a personal computer PC (S7). As explained previously, this print command is a data query told to facsimile apparatus A from a personal computer PC, when a user does selection actuation of the file on a personal computer PC.

[0035] When a print command is told from a personal computer PC (S7:YES), CPU10 is made to print out by the printing section 22 by using as print data the file data on the personal computer PC sent with the print command (S8).

[0036] Furthermore, CPU10 is made to save by making the printed-out print data into output image data at RAM12, and finishes (S9) and this processing. Existence of the print data saved at RAM12 can open the icon folder of RAM12 displayed on the monitor section of a personal computer PC, and can check it

as an icon file with other input image data etc., and a user can operate the icon file equivalent to the print data considered as a request out of the icon folder, and can make print data print out again. In addition, based on a predetermined method, the information which shows that they are print data, the received facsimile data, and scanning data, and classification information, such as a saved date, are given to each icon file, and a user can choose and operate the file needed out of two or more icon files based on them.

[0037] In S7, when a print command is not told from a personal computer PC (S7:NO), it judges whether CPU10 has a facsimile transmitting command from a personal computer PC (S10). As explained previously, this facsimile transmitting command is a facsimile Request to Send told to facsimile apparatus A from a personal computer PC, when a user chooses the data file on a personal computer PC and predetermined operates it.

[0038] When a facsimile transmitting command is told from a personal computer PC (S10:YES), CPU10 takes in the file data on the personal computer PC sent with the facsimile command as facsimile transmit data, and it is made it to carry out facsimile transmission through a modem 13 etc. (S11).

[0039] Furthermore, CPU10 is made to save at RAM12 by making into output image data the facsimile transmit data by which facsimile transmission was carried out (S12), and finishes this processing. A user operates the icon file which is equivalent to facsimile transmit data out of the icon folder, and existence of the facsimile transmit data saved at RAM12 can open the icon folder of RAM12 displayed on the monitor section of a personal computer PC, and can check it as an icon file with other data, and he can make facsimile transmit data to carry out facsimile transmission or print again.

[0040] Therefore, according to facsimile apparatus A which has the above-mentioned configuration and actuation, the monitor section of a personal computer PC can be made to indicate the I/O image data of RAM12 by list. That is, since it is dealt with as if it existed on the personal computer PC through the monitor section of a personal computer PC, and unitary management of all the I/O image data is carried out with a personal computer PC, the actuation procedure at the time of performing various I/O functions based on these I/O image data becomes easy, and various kinds of I/O image data in RAM12 can improve a man machine interface.

[0041] In addition, this invention is not limited to the above-mentioned operation gestalt.

[0042] For example, as data input output equipment, if it has complexly two or more [not only facsimile apparatus but] data I/O functions, it is applicable with other equipments.

[0043] In case the scanning actuation based on a scanning function is made to start, a user may make the actuation start through a personal computer PC.

[0044] Output image data outputted according to actuation of a personal computer PC, such as print data and facsimile transmit data, is good also as that with which only print-out and facsimile transmission are provided, without saving at RAM12.

[0045] Although it considers as the situation that input image data and output image data coexist, into the icon folder equivalent to RAM12, you may make it arranged in a separate subfolder so that an input and an output can be distinguished. Moreover, it is good also as a configuration which distributes every [, such as facsimile data, print data, and scanning data,] data classification and the I/O image data which shall create two or more icon folders for every saved date, and is saved in RAM12 by classification of an icon folder, and displays it on the corresponding folder as an icon file, respectively. While this becomes easy to find the icon file which a user needs, it becomes easy to perform processing which deletes the old file of the date collectively. Moreover, though input image data and output image data are expressed as a thumbnail method, they are good.

[0046] In addition, about the matter which starts in addition to the description part of above-mentioned this invention, unless the effectiveness of this invention is spoiled, a design change can be carried out suitably.

[0047]

[Effect of the Invention] According to the data input output equipment of invention indicated to claim 1, it connects with a personal computer and the monitor section of the personal computer can be made to indicate the classification of a I / O data by list as an example of an information processor, as explained above. That is, since it is dealt with as if it existed on the personal computer through the monitor section

of a personal computer, and unitary management of all the I / O datas is carried out with a personal computer, the I / O data stored in the storage means of data input output equipment can improve the man machine interface at the time of performing various I/O functions based on these I / O datas.

[0048] Moreover, according to the data input output equipment of invention indicated to claim 2, the I / O data which was stored in the storage means of data input output equipment in addition to the effectiveness by data input output equipment according to claim 1 can use a I / O data for input process or output processing as it is, without performing transform processing of a troublesome data format etc., since it considers as the data format in which the direct handling of information processors, such as a personal computer, is possible.

[0049] Furthermore, according to the data input output equipment of invention indicated to claim 3, while the input image data obtained based on scanner ability or a facsimile reception function had been made to store in the storage means of self in addition to the effectiveness by data input output equipment according to claim 1 or 2, it can manage unitary through a personal computer etc.

[0050] Moreover, when output image data is stored in a storage means according to the output actuation from a personal computer etc. in addition to the effectiveness by data input output equipment according to claim 1 to 3, a user can make the output image data process by either the printer ability made into the purpose, or the facsimile transmitting function according to the data input output equipment of invention indicated to claim 4.

[0051] Furthermore, according to the storage of invention indicated to claim 5, actuation of data input output equipment according to claim 1 is realizable by operating CPU based on the memorized program.

[Translation done.]

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CLAIMS

[Claim(s)]
[Claim 1] The data input output equipment are data input output equipment which has a storage means store a I / O data according to the I/O function of data, is connected to the information processor equipped with the monitor section, and performs various kinds of I/O functions, and carry out having the control means which displays on the above-mentioned monitor section the classification of each I / O data stored in the storage means in list display form while making the above-mentioned information processor recognize the above-mentioned storage means as external storage as the description.
[Claim 2] The above-mentioned control means is data input output equipment according to claim 1 which makes a I / O data store in the above-mentioned storage means as a data format [handling / the above-mentioned information processor / data format / direct].
[Claim 3] The above-mentioned control means is data input output equipment according to claim 1 or 2 which makes the input data obtained based on scanner ability or a facsimile reception function store in the above-mentioned storage means.
[Claim 4] The above-mentioned control means is data input output equipment according to claim 1 to 3 which chooses and performs any 1 of the printer ability which should output the output data, or the facsimile transmitting functions when output data are stored in the above-mentioned storage means according to the output actuation from the above-mentioned information processor.
[Claim 5] It has a storage means to store a I / O data according to the I/O function of data. It is the storage which memorized the program for controlling the data input output equipment which is connected to the information processor equipped with the monitor section, and performs various kinds of I/O functions. The storage characterized by memorizing the program containing the control program for displaying on the above-mentioned monitor section the classification of each I / O data stored in the storage means in a list display format while making the above-mentioned information processor recognize the above-mentioned storage means as external storage.
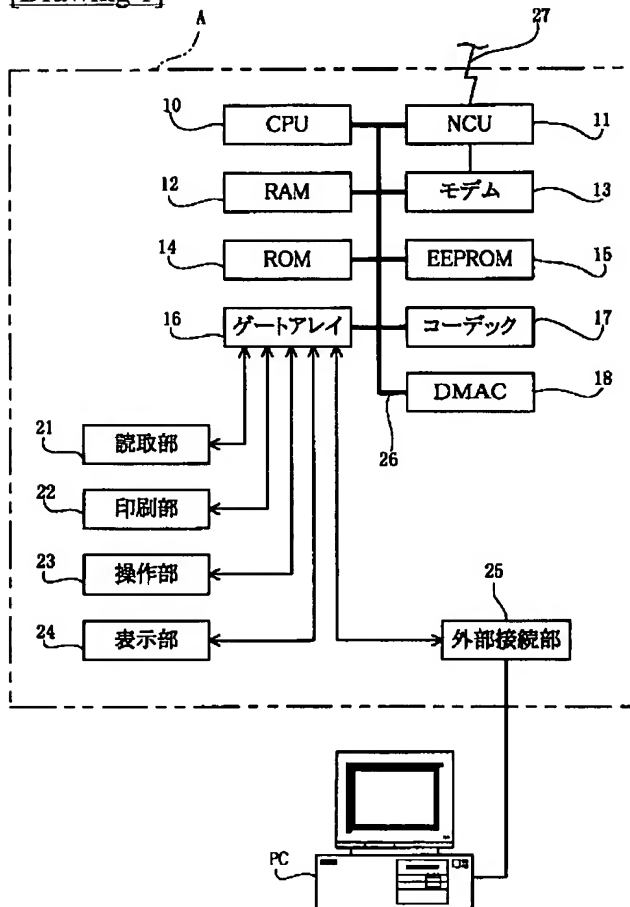

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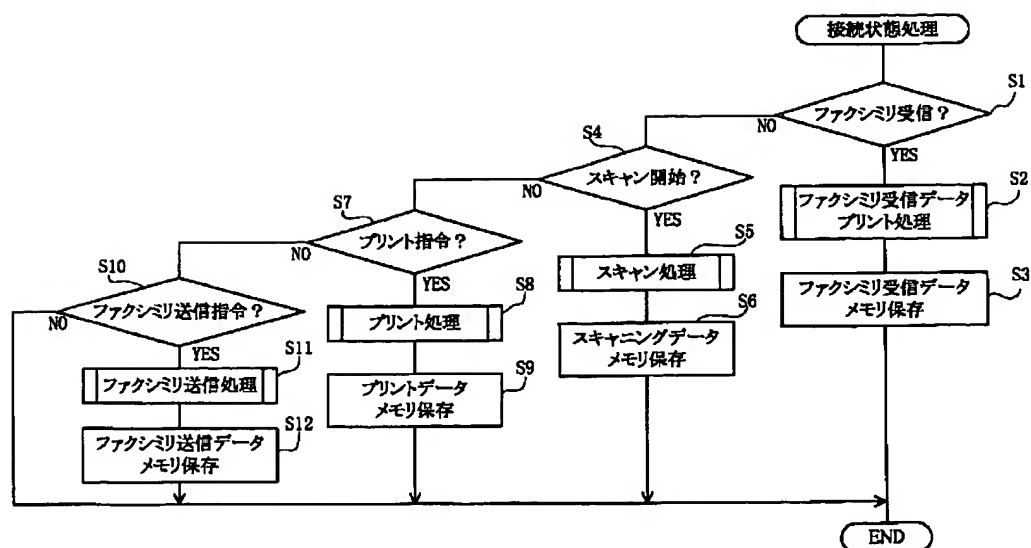damages caused by the use of this translation.

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DRAWINGS

[Drawing 1]

[Drawing 2]

[Translation done.]